SHLITSKIY, Yu.A.; SOLOV'YEV, S.M.

Manufacture of thin targets for tests involving charged particles. Izv. AN SSSR. Ser. fiz. 28 no.10:1724 O '64. (MIRA 17:12)

PROTOPOPOV, A.N.; SELITSKIY, Yu.A.; SOLOV'YEV, S.M.

14, 6 Mev neutron fission cross section of Th^{232} and Np^{237}.
Atom.energ. 4 no.2:190-191 F '58. (MIRA 11:4)
(Nuclear fission) (Neutrons)

PHASE I BOOK EXPLOITATION   SOV/3[illegible]

Akademiya nauk SSSR. Radiyevyy institut

Trudy, t. IX (Transactions of the Radium Institute, Academy of Sciences USSR, Vol. 9) Moscow, Izd-vo AN SSSR, 1959. [illegible] p. Errata slip inserted. 1,[illegible] copies printed.

Ed.: N.A. Perfilov, Doctor of Physical and Mathematical Sciences; Ed. of Publishing House: G.M. Aron; Tech. Ed.: A.V. Smirnova.

PURPOSE: The volume is intended for physicists.

COVERAGE: The book represents volume 9 of the Transactions of the Radium Institute and contains the results of studies conducted at the Institute chiefly from 1955 to 1956. There are a number of articles dealing with the study of nuclear reactions occurring with particles of different energies ranging from several eV up to hundreds of Mev. Others treat different problems of the physics of neutrons. Results of studies of various neutron sources, neutron energy distribution in a moderator (water), and other problems connected with the theory of neutron interaction with matter are presented. The majority of the articles are concerned with problems of method. The authors provide a complete description of the construction of equipment and of the results of tests performed under laboratory conditions. No personalities are mentioned. References accompany individual articles.

Shamov, V.P. Uranium Fission due to High Excitation Energy [illegible]

Shamov, V.P. Fission of Heavy Nuclei (Z<73) due to High Excitation Energy [illegible]

Protopopov, A.N., Yu.A. Selitskiy, and S.M. Solov'yev. Cross Section for Fission of Uranium Bombarded by Fast Neutrons [illegible]

Vasil'yev, Yu.A., and A.N. Pisarevskiy. Study of Gamma Rays of Certain Neutron Sources [illegible]

Vasil'yev, Yu.A., and A.N. Pisarevskiy. Study of Gamma Ray Spectrum of Po-Be Neutron Source [illegible]

Artem'yev, [illegible], A.N. Protopopov, and B.M. Shiryayev. Study of Gamma Rays Accompanying the Fission of U235 by Thermal Neutrons [illegible]

Prokof'yev, Yu.P., K.A. Petrzhak, and M.A. Bak. Cadmium Ratios for Ag107 and Au [illegible]

Bak, M.A., K.A. Petrzhak, and Yu.F. Romanov. Analysis of a Neutron Field of Uniform Density [illegible]

[illegible], M.A. Bak, K.A. Petrzhak, and Yu.F. Romanov. Neutron Energy Distribution in the Water Surrounding a Source [illegible]

Romanov, Yu.F., K.A. Petrzhak, M.A. Bak. Measurement of Diffusion Length of Thermal Neutrons in Water [illegible]

Bak, M.A., [illegible], K.A. Petrzhak, and Yu.F. Romanov. [illegible] Neutron Sources [illegible]

[illegible] Measuring the Number of Neutrons Emitted by a Radium-Beryllium Source [illegible]

[illegible]

Card 1/[illegible]

SOV/120-59-4-13/50

AUTHORS: Protopopov, A. N., Selitskiy, Yu. A., Solov'yev, S.M.

TITLE: Ultraviolet Radiation Converters in a ~~Gas Scintillation~~ Counter

PERIODICAL: Pribory i tekhnika eksperimenta, 1959, Nr 4, pp 66-69 (USSR)

ABSTRACT: The compounds used are: quaterphenyl, tetraphenylbutadiene, sodium salicylate, and POPOP. The fluorescence decay curves of these substances are examined. Results are given for neutron-induced fission in ^{235}U. The counter is filled with xenon; the design is shown in Fig 1, in which the source is at the top, the valve is on the right, and the end-window photomultiplier (type FEU-33) is at the bottom. The pressure used is near atmospheric. The compounds are deposited in various ways on the walls of the counter and (if they are transparent) on the window to the photomultiplier. The optimum thickness is given as 60 mg/cm^2. The table gives the response to α-particles from ^{241}Am without converter, with tetraphenyl-butadiene, with quaterphenyl, with sodium salicylate, with POPOP, and with quaterphenyl again. The first

Card 1/3

SOV/120-59-4-13/50

Ultraviolet Radiation Converters in a Gas Scintillation Counter

Column gives the relative light output; the second gives amplitude resolution (in %) for 5.5 MeV α-particle. The notes state that the converter was on the inside of the quartz window, and on the outside, respectively. Fig 2 shows the poisoning effects produced by vapours of the converters: a) sodium salicylate, b) quaterphenyl, and c) POPOP. The times are in days. Fig 3 shows the amplitude resolution for the fission fragments produced from ^{235}U by 15 MeV neutrons (the broken line represents the actual energy distribution). The decay time is nearly independent of the converter (about 10^{-8} sec). The converter to be used must be chosen to suit the conditions

Card 2/3

SOV/120-59-4-13/50

Ultraviolet Radiation Converters in a Gas Scintillation Counter

of the experiment. The paper contains 3 figures, 1 table, and 5 references, all English.

ASSOCIATION: Radiyevyy institut AN SSSR (Radium Institute of the Academy of Sciences)

SUBMITTED: June 30, 1958.

Card 3/3

21(7)

AUTHORS: Protopopov, A. N., Selitskiy, Yu. A., Solov'yev, S. M. SOV/89-6-1-9/33

TITLE: Cross Section of the Fission of Am^{241} by Neutrons With an Energy of 14.6 MeV (Secheniye deleniya Am^{241} neytronami s energiyey 14.6 Mev)

PERIODICAL: Atomnaya energiya, 1959, Vol 6, Nr 1, pp 67 - 68 (USSR)

ABSTRACT: Americium is precipitated electrolytically on a platinum disk. The target of 15 mm diameter is placed at a distance of 30 mm from the neutron source. The neutrons originate from the reaction $T(d,n)He^4$. A quantity of 12 μg americium was used. The Pu^{239} content of the preparation was less than 0.6%.

The measuring methods used for determining neutron flux and for counting fissions are described by reference 4. The fission fragments were measured in a gas scintillation counter which was filled with xenon. Transformation of the ultraviolet light flashes of the xenon into visible light was brought about by means of quaterphenyl, which was applied

Card 1/2

Cross Section of the Fission of Am^{241} by Neutrons With an Energy of 14.6 MeV SOV/89-6-1-9/33

to the interior of the counter. The light flashes are recorded by a multiplier FEU -33. The pulses originating from the α-particles are conveyed to a rapid-action discriminator which is fitted with crystal diodes of the type Dg-1. The pulses are broadened, amplified, and fed into a single-channel catalyzer.
The statistical error committed when counting the fission products amounted to 2%.
The fission cross section for Am^{241} for 14.6 MeV neutrons was determined as amounting to $\sigma = 2.35 \pm 0.15$ b.
The target was produced by G. I. Khlebnikov. A not irradiated target was measured by V. G. Nedovesov in a magnetic α-spectrometer. There are 1 figure and 4 references, 1 of which is Soviet.

SUBMITTED: September 22, 1958

Card 2/2

PHOTOPOPOV, A.N.; SELITSKIY, Yu.A.; SOLOV'YEV, S.M.

Fission cross-section of uranium for fast neutrons. Trudy Radiev. inst.AN SSSR 9:55-60; '59. (MIRA 14:6)
(Uranium)

ARTEM'YEV, Yu.M.; BARANOV, I.A.; BLINOV, M.V.; KUZNETSOV, M.I.; PROTOPOPOV, A.N.; SELITSKIY, Yu.A.; SOLOV'YEV, S.M.; SHIRYAYEV, B.M.; EYSMONT, V.P.

Low voltage neutron generator. Trudy Radiev.inst.AN SSSR 9:134-140 '59. (MIRA 14:6)

(Neutrons)

33238

S/089/62/012/002/010/013
B102/B138

26.2264
21.6000

AUTHORS: Kazarinov, N. M., Matveyev, O. A., Ryvkin, S. M., Solov'yev, S. M., Strokan, N. B., Tarkhin, D. V.

TITLE: Investigation of semiconductor spectrometer counters for measuring fragment energies

PERIODICAL: Atomnaya energiya, v. 12, no. 2, 1962, 153 - 154

TEXT: U^{235} fission fragment energy was measured by semiconductor counters developed at the fiziko-tekhnicheskiy institut im. A. F. Ioffe (Physicotechnical Institute imeni A. F. Ioffe). The surface-barrier junction of these counters was produced by spraying gold onto an n-type silicon plate. These counters, which were studied earlier by the authors (Atomnaya energiya, 11, no. 3, 217, 1961), were found to be well suited for alpha spectrometry (resolution 0.5% for E_{α} = 5.5 Mev). The volume charge region was about 60 μ for maximum voltage, much greater than the fragment range in silicon. Fragment energy was measured with a 0.5 mm Al target, placed in a thin-walled aluminum vacuum chamber. The target had a vacuum-sprayed layer of UF_4, enriched in U^{235} to 92.8%. Diameter of the

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S/089/62/012/002/010/013
B102/B138

Investigation of semiconductor ...

layer was 1.2 cm, and the total weight was 120 μg. The silicon counter was placed 1.5 cm below the target to avoid being hit by the neutron beam collimated into the chamber. The counter pulses were fed to a preamplifier and thence to a 100-channel analyzer. The fragment energy spectra thus measured differed considerably from those obtained from time-of-flight measurements. This was found to be due to energy losses in the counter surface, which were strongly dependent on the angle of incidence of the fragments. As the fragments lose most of their energy in the first part of their path this effect was much higher for them than for alphas. Special counters of 16 mm^2 area were produced with a thinner layer of gold and the energy spectrum was measured again and compared as before. This time the shape was the same, with a difference of about 7 Mev in absolute values. This is attributed partly to energy losses in the fissile layer, and partly to the energy being carried away by fission neutrons. In the Au layer losses do not exceed 1 Mev. Apart from other advantages the silicon counters yield better results than e. g. ionization chambers. There are 2 figures and 5 references: 1 Soviet and 4 non-Soviet. The four references to English-language publications read as follows: W. Stein.

Card 2/3

33238
S/089/62/012/002/010/013
B102/B138

Investigation of semiconductor ..

Phys. Rev 108, 94, 1957; H. Smitt et al. Bull. Amer. Phys. Soc., Ser. II, 6, No 3, 240, 1961; W. Joyner et al. IRE Trans. Nucl. Sci. 8, No. 1, 34, 1961; J. Wahl Phys. Rev 95, 126, 1954.

SUBMITTED: July 28, 1961

Card 3/3

KUSHNIRUK, V.P., RYNDINA, [illegible] SAVIN, S.M., CHUBURKOVA, I.I.

Usability of large-area semiconductor detectors for X-spectrometry. Atom. energ. 15 no.4:324 O '63. (MIRA 16:10)

L 1635-66 EWT(m)/EWP(i)/EPA(w)-2/EWP(t)/EWP(b)/EWA(m)-2 IJP(c) JD

ACCESSION NR: AP5016398 UR/0120/65/000/003/0219/0220
539.234

AUTHOR: Selitskiy, Yu. A.; Solov'yev, S. M.

29
B

TITLE: Preparation of thin metal films and their use in targets
44,55 14

SOURCE: Pribory i tekhnika eksperimenta, no. 3, 1965, 219-220

TOPIC TAGS: particle accelerator target, metal film
19

ABSTRACT: G. Dearnaley's method (Rev. Sc. Instr., 1960, 31, 197) of preparing thin carbon films on a soap-coated glass plate was modified by substituting Al, Ag, Cu, Pb, and Bi for carbon. Vacuum-sprayed at 10^{-4}—10^{-5} torr metal films with a weight of 20—70 μg/cm² were obtained (Al — 20—300, Ag — 40-700, Cu, Pb, Bi, — 200 μg/cm²). Al and Ag films were used as backings for uranium-tetrafluoride and thorium targets. Orig. art. has: no figure, formula, or table.

ASSOCIATION: none

SUBMITTED: 22Apr64 ENCL: 00 SUB CODE: NP, NM

NO REF SOV: 001 OTHER: 001

Card 1/1 DP

L 13172-66 EWT(m)/EWA(h)

ACC NR: AP6001152 SOURCE CODE: UR/0367/65/002/003/0460/0465

AUTHOR: Nemilov, Yu. A.; Selitskiy, Yu. A.; Solov'yev, S. M.; Eysmont, V. P.

ORG: None

34
B

TITLE: The angular anisotropy of fission 19,55 by sub-barrier deutrons

SOURCE: Yadernaya fizika, v. 2, no. 3, 1965, 460-465

TOPIC TAGS: nuclear fission, fission product, deutron bombardment, uranium, plutonium, angular distribution

ABSTRACT: This article presents the results of new measurements of the angular distribution of fission products for the fission of heavy nuclei by deutrons of various energies (below the Coulomb barrier). Specific details are given for U^{235} and Pu^{239}, and deutron energies between 5.7 and 12.1 Mev. It is found that the angular distributions are appreciably anisotropic and that the energy dependence of the anisotropy of the odd-even nuclear targets has certain significant features. For example, for Pu^{239} the anisotropy increases with a decrease in deutron energy, whereas for U^{235} it decreases and passes into the region of "negative" values ($\sigma f(0°)/\sigma f(90°) < 1$). The significant features indicated are interpreted as the result of the specific feature of the interaction of low-energy deutrons with heavy nuclei. In conclusion, the authors note that, given data more precise than that available at present, the results of the present work may be employed for the calculation of the moments of inertia at the saddle point for nuclei which differ from those studied earlier according to the nucleon composition and excitation energy. Orig. art.

Card 1/2

L 13172-66

ACC NR: AP6001152

has: 4 figures.

SUB CODE: 18/ SUBM DATE: 20Feb65/ ORIG REF: 011/ OTH REF: 009

Card 2/2

L 3837-66 EWT(1)/T/EED(b)-3 IJP(c)

ACCESSION NR: AP5017496 UR/0368/65/002/006/0558/0561

771.534

AUTHOR: Kheynman, A. S.; Karaul'shchikova, R. V.; Volkova, G. S.; Parfenova, N. M.; Solov'yev, S. M.; Vompe, A. F.; Aleksandrov, I. V.; Kurepina, G. F.; Ivanova, L. V.

TITLE: Infrachromatic materials for scientific and technical purposes

SOURCE: Zhurnal prikladnoy spektroskopii, v. 2, no. 6, 1965, 558-561

66
B

TOPIC TAGS: IR photography, photographic emulsion, photographic processing

ABSTRACT: The article summarizes the photographic properties of new infrachromatic films and plates developed at NIKFI (Scientific Research Institute of Motion Picture Photography) to increase the stability and sensitivity of infrachromatic materials used for spectroscopy, astro-photography, and other scientific purposes. Tables of the photographic characteristics of the films and plates are listed, and spectral sensitivity curves are given for all the emulsions. The appropriate development techniques are also discussed. The individual films are compared with those produced by Eastman Kodak. It is recommended in the conclusion that the available assortment of infrachromatic emulsions (11 types in the SSSR) be reduced, since Eastman produces only four types which seem to meet all the requirements. Orig. art. has: 3 figures and 4 tables.

Card 1/2

L 3837-66
ACCESSION NR: AP5017496

ASSOCIATION: none

SUBMITTED: 16Feb65

ENCL: 00

SUB CODE: [illegible], OP

NR REF SOV: 000

OTHER: 000

Card 2/2

L 37977-66 EWT(m)

ACC NR: AP6016809 (N) SOURCE CODE: UR/0367/66/003/001/0065/0072

AUTHOR: Selitskiy, Yu. A.; Solov'yev, S. M.; Eyssont, V. P.

ORG: none

TITLE: Characteristics of the fission of Th^{232} by deuterons and the dependence of the kinetic energy of the fragments on the excitation energy of the fissioning nuclei

SOURCE: Yadernaya fizika, v. 3, no. 1, 1966, 65-72

TOPIC TAGS: thorium, fission product, nuclear fission, deuteron reaction, kinetic energy, excitation energy

ABSTRACT: To obtain further information on the dependence of the kinetic-energy distribution of fission fragments on the excitation energy, the authors have undertaken a comparison of the properties of mass and kinetic-energy distributions of Th^{232} fissioned by 9 and 12.1 Mev deuterons. The energies of paired fission fragments were measured with previously described semiconductor-detector apparatus (YaF v. 1, 677, 1965). Approximately 10,000 fragment pairs were registered for each value of the deuteron energy. The measurements yielded the fragment mass distribution, the average fragment energies, and the dispersion of the determined masses, as well as the distributions for the kinetic energy at fixed masses. The results, together with data obtained by others, are analyzed from the point of view of the model of "nuclear shells in fragments" and the postulated existence of two independent types of fission (symmetrical and asymmetrical). It is shown that if the model of two types of

Card 1/2

L 37097-66

ACC NR: AP6016809

fission is assumed, most of the experimental data obtained at medium energies can be reconciled with the theory, whereas the shell-effect, surface tension, and viscosity concepts, which are physically more clear than the two-fission model, have not been sufficiently well developed to serve as a basis for a quantitative analysis. Orig. art. has: 3 figures, 8 formulas, and 1 table.

SUB CODE: 20/ SUBM DATE: 22Apr65/ ORIG REF: 010/ OTH REF: 014

Card 2/2

[redacted]

PROCESSES AND PROPERTIES INDEX

BC

B-II-3

Influence of p_H on hydroxylamination. S. M. Skolovtsev (Photo-Kino Chem. Ind., 1938, No. [illegible]). Emulsions were hydroxylaminated by NH_2 and by buffers at various p_H vals. In each case the added sensitivity increases to a max. as the p_H is increased. The max. is higher and occurs at a greater p_H for NH_2. The sub-sensitivity shows little change with the buffer solutions until p_H 10 is reached, after which it increases rapidly. With NH_2 it increases up to p_H 11 and then decreases. With NH_2 only the blue-sensitivity is const. w somewhat lower as the solution becomes more acid. The added volume-sensitivity increases with a lower p_H.
Ch. Abs. (c)

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

1ST AND 2ND COPIES

PROCESSES AND PROPERTIES INDEX

Ca

The reducing properties of photographic gelatin. S. M. Sidgwick. *Photo-Kino Chem. Ind.* (C. S. N. R.) No. 3, 10-17 (1935).- A study of the colorimetric measurement of the reducing power of gelatin for $AgNO_3$. The effect of the concn. of the $AgNO_3$ and of the gelatin, and of the rate of development of the color, for various temps. and for various values of p_H have been measured. NH_3 greatly favors the growth of Ag particles but has little influence on the rate at which nuclei are formed. C. E. K. Mees

ASM SLA METALLURGICAL LITERATURE CLASSIFICATION

Changes in the physicochemical properties of cinematographic films on prolonged standing. S. M. Sidov'ev and Ya. A. Shnaikman. *Kino-Foto-Kinos. Prom.* 1938, No. [illegible]; *Referat Zhur.* 1, No. 3, [illegible], cf. C. A. 32, [illegible]. There was but slight difference in the physicochem. properties of emulsion-coated (unprocessed) and non-coated films which were stored outdoors for 6-7 years from those not exposed to the weather. Strength decreases with increased duration of storing. Aging under thermostatic conditions had the same effect on the dynamic properties as had natural aging. A splitting of the film into layers was observed in natural aging under unfavorable atm. conditions.

W. R. Henn

Importance of the physicochemical constants of gelatin for emulsion making. S. M. Sakov'ev. *Azot/ekhim Prom.* 9, No. 10, 31-4 (1939).—Gelatins are classified into 2 groups: (1) those having a high jelly strength, a high m. p. and a low swelling capacity; (2) those having a low jelly strength, a low m. p. and a high swelling capacity. Measurements were made of these properties of a large no. of gelatins over a period of 3 years, and attempts were made to find definite relationships between them. The properties of gelatins prepd. in the years 1934, 1935 and 1936 varied widely. No relationship was found between jelly strength and swelling power or between jelly strength and m. p. There is some relationship between swelling power and m. p. The phys. properties of emulsions were compared with those of the gelatins used in their manuf.

W. R. Eichler and J. A. Leermakers

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

SOLOV'YEV, S. M.

"Investigations of Optical Sensitization of Silver Halides II. Absorption Spectra of Dyes and Sensitization Spectra of Silver Halides." Acta Phys., 19, No. 6, 1944; Sci. Research Inst. of Cinematog. and Photog., Moscow.

3

Absorption of light in layers of dyes on glass S. M. Sidor'ev. *J. Tech. Phys. (U.S.S.R.)* 19, 65-72 (1949). Thiocarbocyanine dyes, pinacyanol chloride, erythrosine, and a substituted naphthenone dye form layers on glass that exhibit polychroism. In most cases the absorption bands of the layers are identical with sensitization bands of the dyes when adsorbed on AgBr. The films are composed of two layers. The upper layer can be removed by rubbing the surface with a wad of cotton. The lower layer exhibits a marked anisotropy, as shown by expts. with a polarizing microscope. This is attributed to an oriented deposition of the dye mols. on the glass surface, the orientation being caused by active groups in the surface, such as SiO_2, Na_2O, or K_2O. This layer is apparently not unimol., since its absorption spectrum is identical with the mol. absorption of the dye in org. solvents. Further crystn. of the dye subsequently occurs in an unoriented fashion upon the lower layer, with only a weak interaction between the two layers. This causes, on the one hand, the anisotropy of the double layer (practically the same as that of the lower layer) and, on the other hand, the similarity of the absorption spectrum of the upper layer to that of a soln. of the dye in an electrolyte, in which there are large aggregates if not a suspension of the dye. It is thought that a layer of a dye adsorbed on AgBr is very similar in structure to that of the dye when deposited on glass.

Arthur J. Miller

ASM SLA METALLURGICAL LITERATURE CLASSIFICATION

PROCESSES AND PROPERTIES INDEX

5

CA

Optical sensitization of silver halides. I. Physicochemical and photographic properties of dyes with different lengths of the polymethine chain. S. M. Sokov'ev (Research Inst. Cinematography and Photography, Moscow). *J. Phys. Chem.* (U.S.S.R.) 19, 451-8(1945); cf. C.A. 39, 2765. Five 3,3'-diethylthiocyanine halides with conjugated chains ranging in length from one to 9 CH groups were investigated. As the polymethine chain lengthened, the adsorption of dyes by AgBr grew regularly. The adsorption isotherms have a two-level form. The first level corresponds to 1 mol. of dye retained by 0.5-2 bromide ions; this indicates a unimol. layer. The 2nd level corresponds to 1 dye mol. to 0.2-0.6 bromide ions on the surface; this indicates a dye layer thickness of 2-5 mols. The adsorption was detd. in powders and sols of AgBr. Photographic tests showed that as the length of the chain increased, the max. of sensitization is displaced toward the long wave length, the concn. of the dye corresponding to optimum sensitization is constantly reduced, and the fogging properties of the dye are increased. II. **Absorption spectra of dyes and sensitization spectra of silver halides.** *Ibid.* 450-64. See C.A. 39, 2917. W. V

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

4

A phenomenon occurring during diffusion of dyes S. M. Sokolov (Moscow Chemical Photo Res. Inst.) Zh. Fiz. Khim. (USSR) 16, 741-3(1942). In the course of study of diffusion of dyes into gelatin, layered different pigmentation were observed, the 2 top ones were sharply defined while the color of the bottom layer gradually diffused into the color of the gel body. Thus, with pinacyanol the top layer is deep violet, the middle layer is [illegible] and the bottom layer is light blue. A similar gradation was observed with [illegible] crystalline [illegible] chloride. The phenomenon is apparently tied up with adsorption of the aggregates on the gelatin micelles. L. M. Kovalenko

METALLURGICAL LITERATURE CLASSIFICATION

[illegible]

[illegible]'Ye., [illegible] M.

"Absorption Spectra of Pigments in the Presence of Lyophile Colloids," Zhur. Obshch. Khim., 16, No. 9, 1946, Moscow Scientific-Research Cinema-Photo Inst., Moscow, -1944-.

P.A.

Film & Coated Materials
Related to Photography

277 535.68 : 771.534.21

Fastness of Dyes to Light. I. Fastness to Light and the Dispersion of Solutions of Dyes. S. M. Sokolov'ts. *J. Gen. Chem. (U.S.S.R.)*, 16, 953-60, 1946. The introduction of gelatin into solutions of light-unstable cyanine dyes leads to light-stability of only those dyes which are capable of easy aggregation in the presence of gelatin. The increase of light fastness of dyes from the presence of electrolytes proceeds as a result of the coagulating effect of the introduced ions in the order Al, Ba, Ca, K, Na. The light fastness of dyes in solutions grows with the decrease of degree of dispersion of dye particles.

Chem. Abs.

1948

Absorption spectra of dyes in the presence of lyophilic colloids. S. M. Solov'ev (Moscow Kino-Photo Research Inst.). *J. Gen. Chem.* (U.S.S.R.) 16, 1405-15 (1946) (in Russian). In pinacyanole chloride soln. showing, depending on the concn. c, the α (monomer), β (dimer), and γ (polymer) absorption peaks in different relative intensities, addn. of 0.06% gelatin causes a distinct decrease and a shift to shorter waves of the γ-band, a decrease or disappearance of β, an increase or at least no decrease of α, and appearance of a new long-wave J-band corresponding to max. photochem. sensitization of photographic emulsions. With a concn. $c = 5 \times 10^{-6}$ mol. and a gelatin content of 0.7%, addn. of NaCl from 1 to 100% merely caused further lowering of absorption without altering the shape of the curve; electrolytes without gelatin have the same effect as the latter; that the action of gelatin is due not to its electrolyte content but to the colloid itself was verified in expts. with rigorously salt-free gelatin. The modified absorption curves are identical with those shown by the dye adsorbed on glass. With the gelatin content increasing from 0.06% to 0.6%, the γ and α bands increase, β decreases, but the changes stop only up to about 0.06%, show beyond it, very high (1%) gelatin content causes no further change. Another polymerizable dye, 3,3'-diethylthiacarbocyanine chloride,

shows on addn. of gelatin a decrease of α and γ and some increase of J. The latter effect is much more pronounced with agar-agar: with 2%, the J-band becomes the main absorption peak. No such changes of the absorption curve were observed with dyes not subject to polymerization; e.g., in 3,3'-dimethyl-9-ethylthiacarbocyanine chloride gelatin causes only a slight shift to longer waves. Films on glass of pinacyanole chloride in cellulose triacetate in acetone (80) + EtOH (20), showed on drying gradual decrease of α, increase of β and γ; treatment with alc.-water restored the original absorption. Similar effects were observed with 3,3'-diethylselenocarbocyanine chloride but were absent with dyes not subject to polymerization: 3,3'-diethylthiacyanine, 3,3'-diethylthiacarbocyanine, 3,3'-diethylthiatricarbocyanine iodides.

N. Thon

ASB-SLA METALLURGICAL LITERATURE CLASSIFICATION

P.A.

Pure + Applied Sciences
Related to Photography

278 535.68 : 771.356

Investigations of Light Fastness of Dyes. II. Light Fastness of Solutions of Various Dyes of Different Degrees of Dispersity. S. M. Sokov'ev. *J. Gen. Chem. (USSR)*, 16, 1416-20, 1946. On 29 common light filter dyes, the degrees of dispersity were determined by diffusion experiments from a 0.02% aqueous solution into a 10% gelatin gel, extending over eight days; light fastness on illumination of 0.02% aqueous solutions by a 500-watt lamp at 25 cm distance was determined by daily determinations of the absorption curves in the visible range. Molecular disperse dyes (phenosafranine, methylene blue) show the poorest fastness, e.g., the absorption coefficient in the 600 mμ peak of methylene blue fell from 1.8 to 0.5 in 120 hours. Colloidal dyes (e.g., toluidine green, naphthol green, Congo red, showed hardly any fading after five days; in this group, only erythrosin showed low light fastness. Semi colloidal dyes (e.g., acridine orange, Filter blue II, eosin, Crystal Ponceau) show widely varying degrees of light fastness but are, as a rule, compressed between the two extreme groups. The only exception is Fabrot D with an abnormally high light fastness for this group. While in the molecular and in the colloidal dyes, the rate of the reactions resulting in fading is primarily determined by the surface development, i.e., the dispersity, this factor alone is insufficient to account for the differences found in the semi colloidal group where specialities of molecular structure must play a determining role. *Chem. Abs.*

1947

SOLOV'YEV, S.M.

Spectra of absorption of dyes and spectra of the sensitising of silver halide. Trudy NIKFI no.7:46-51 '47. (MIRA 11:6)

1. Laboratoriya tekhnologii fotosloyev Nauchno-issledovatel'skogo kino-foto-instituta, Moskva.
(Dyes and dyeing)

Photographic Abstracts

Preparation of Light-Sensitive Materials and Exposure

77.021.13 : 771.534.59

...tographic Action of Benzimidazoles. S. M. SOLOVEV and V. A. SHAKOVA. ...ral Khimii, 20, 439-448, May, 1947 : S. et I.P., 20, 11-13, Jan., 1949.—The authors have studied a number of benzimidazoles with respect to their ...tions with silver ions, their behaviour with metallic silver and their adsorp... to silver bromide, and offer an explanation of the action of these compounds ...ti-fogging agents. F.E.F.

1949-38

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Photolysis of silver bromide P. A. Yampol'skii and S. M. Sokov'ev (Sci. Research Inst. Cinematography and Photography, Moscow). *J. Phys. Chem.* (U.S.S.R.) 21, 800 (1947) (in Russian). Before the quantum yield φ of the photolysis of sensitized AgBr can be det., the φ of AgBr contg. free Ag must be known, because Ag is liberated during any photolysis and raises the sensitivity of AgBr. This φ is 0.07 for 540 mμ and 0.05 for 578 mμ. The rate v of photolysis of AgBr first increases when the transparency T of the AgBr layer decreases because of formation of Ag, but both v and T soon become const.; after long exposures, e.g. 40 min., v slightly decreases. The constancy of T in spite of the continuing formation of Ag probably means that light is absorbed mainly by particles of a definite size; their no. does not increase indefinitely because, at later stages of the process, particles grow rather than their numbers. The *transparency* of photosensitive layers can be measured when the exposures are short. The results show that the light absorption by the sensitizing dye is far more important than that by Ag as long as there are less than 5×10^{10} atoms of Ag per 0.05 g.-mol. AgBr. A *Hg lamp* operating at 20 atm. was used for illumination. The emission spectrum of this lamp shows sharp spectral lines. This lamp therefore is preferable to a lamp operating at 100 atm., of which the continuous emission spectrum is almost as intense as the line spectrum. I. I. Bikerman

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

Photolysis of silver bromide sensitized by dyes. S. M. Sidov'ev and P. A. Yampol'skii. *J. Phys. Chem.* (U.S.S.R.) 21, 907-12(1947)(in Russian); cf. preceding abstr.—Suspensions of AgBr (0.06 *M*) in 0.01 *M* aq. $NaNO_3$ soln. contg. sensitizing dyes were illuminated with Hg light, and the amt. of light absorbed was compared with the amt. of Ag liberated (detd. potentiometrically). Since Bagdasar'yan (C.A. 33, 5750[8]) showed that many sensitizing dyes react with Br liberated by light, only dyes stable toward Br were used. At a const. intensity of illumination the Ag amt. increases with time less rapidly than linearly; this is caused by absorption of light in Ag metal. The quantum yield of Ag was at 430, 546, and 578 mμ in the presence of fluorescein 0.98, —, —; eosin 0.76, 0.09, 0.06; erythrosin 0.75, 0.20, 0.07; rhodamine B 0.72, 0.22, 0.26; acridine orange 1.00, 0.21, 0.04; 3,3'-diethylthiacyanine iodide 0.97, —, —; 3,3'-diethylthiacarbocyanine iodide 0.75, —, 0.27; 3,3'-diethylthiadicarbocyanine iodide 0.88, —, —; 3,3'-diethyl-9-ethylthiacarbocyanine chloride 0.71, 0.08, 0.10; 3,3'-dimethyl-9-ethylthiacarbocyanine bromide 0.84, —, 0.11; 3,3'-diethylthiaquinopseudocyanine iodide 0.97, 0.16, —; 3,3'-diethyl-4,5,4',5'-dibenzothiacarbocyanine *p*-toluenesulfonate 1.00, 0.14, 0.05. Dyes lower the quantum yield within the sensitivity range of AgBr usually the more the better they sensitize. As between 546 and 578 mμ, the quantum yield is greater for that wave length λ which is nearer to the optimum of sensitization; the λ of this optimum is given for the dyes used. I. I. Bikerman

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

Optical sensitization of silver halide. VII. Absorption spectra of sensitizing dyes in the crystalline state. S. M. Sakov'ev and P. A. Vasnetsov (Sci. Research Inst. Cinema and Photography, Moscow). J. Phys. Chem. (U.S.S.R.) 21, 1237-61(1947)(in Russian); cf. C. A. 42, 2872e.—Because sensitizing dyes in a photographic emulsion may be present as crystal like aggregates, the absorption spectra of sensitized emulsions are compared with those of dye crystals. Crystals were spread on glass plates, and their reflection R was det. within the whole visible range. Special expts. showed that $1/R$ varied with the wave length λ as did the absorption coeff. The dependence of $1/R$ on λ was more pronounced the rougher was the crystal layer. The max. of sensitization S and of $1/R$ coincide for phloxin (at 575 mμ). The $1/R$ of erythrosin has a max. at 572 mμ corresponding to the max. of S in emulsions containing much erythrosin, and another max. at 525 mμ, which is observed also in aq. erythrosin soln. The max. of $1/R$ of rosin (528 and 563 mμ) are shifted toward red compared with the max. of S. An agreement between the max. for $1/R$ and S is observed for 3,3'-diethyl-9-ethylthiacarbocyanine chloride and 3,3'-dimethyl-9-ethyl-5,6,5',6'-dibenzothiacarbocyanine chloride. The incomplete agreement between the dependence on λ of $1/R$ and S may be due to dependence of S on the concn. of sensitizer in the emulsion, to deviation between $1/R$ and absorption, and to orientation of dye crystals on Agl. J. I. Ikkerman.

Solov'yev, S.M.

USSR/Optics K

Abs Jour: Referat Zhur-Fizika, 1957, No 4, 10661

Author : Solov'yev, S.M.
Inst : Not Given
Title : New High Sensitive Infrachromatic Film

Orig Pub: Zh. nauch. i prikl. fotogr. i kinematogr., 1956, 1, No 3, 233-234

Abstract: Description of the fields of application and processing condition of the high sensitivity infra-film, produced by the firm Kodak.

Card : 1/1

Solov'yev, Sergey Mikhaylovich

Fotografirovaniye v infrakrasnykh luchakh [Photographing with infra-red rays] Moskva, "Iskusstvo," 1957.

85 (1) p. illus., diagrs., graphs, tables.

"Literatura" p. 84-(86)

SOLOV'YEV, S.M.

4
4E 2c
4E 4j
4E 2L

Action of gaseous oxygen on photographic layers. I. Effect of oxygen on the photographic properties of sensitized and nonsensitized layers. S. M. Solov'ev. *Zhur. Nauch. i Prikład. Fot. i Kinematog.* 2, 260-9(1957); cf. Smith, *C.A.* 48, 485c.—Neg. films with emulsions prepd. with NH_3 were kept in O at pressures from 8 to 30 atm. for times up to 24 days and their sensitivities (*S*) were then measured. Values of *S* are tabulated and graphed with respect to O pressure, time of storage in O, and time of development for nonsensitized emulsions and those sensitized with 3,3'-dimethyl-4,5,4',5'-dibenzo-9-ethylthiacarbocyanine chloride (I), 9-ethylthiacarbocyanine with 2 substituents in the heterocyclic part of the mol. (II), 3,3'-diethyl-9-methylthiacarbocyanine iodide (III), 3,3'-diethyl-4,5,4',5'-dibenzoxacarbocyanine *p*-toluenesulfonate (IV), or 9-methylthiacarbocyanine substituted on the side-chain (V). As the O pressure is increased from 0.006 to 30 atm., the *S* of nonsensitized films is const., while that of sensitized ones decreases over 80% (after 40 days at 30 atm.). The contrast and fog level are unchanged. The order of decreasing stability of the given sensitizers after 25 days in O at 10 atm. is IV>III>V>I>II.

J. W. Lenzberg, Jr.

CR

SOLOVYEV, S.M.

Distr: 4E4j/4E2d

Effect of gaseous oxygen on photographic layers. II. Reversibility of the effect of oxygen on the photographic properties of layers. S. M. Solov'ev. *Zhur. Nauch. i Prikład. Fot. i Kinematografii*, [redacted]; *cf. C.A.* 52, 5175a.—The sensitivity (*S*) of panchromatic and nonsensitized films was detd. after storage in O at pressures up to 10 atm. and temps. up to 60° for periods up to 30 days. Data are plotted. O does not affect the latent image on a high-speed panchromatic film. Films kept 5 days in O at 3 atm. and temps. over 40° retained less than 20% of their original *S*. In another expt., the *S* of films kept in O fell 50% during the first 5 days, then remained const. in the case of surface development, while the *S* of similar films was const. throughout in the case of internal development. The *S* of films desensitized by storage in O was partly restored by placing the films in a vacuum, but after repeated alternations of storage in O and evacuation this effect was less marked. It is suggested that the effect of O consists in the gradual accumulation of adsorbed O on the AgBr cyrstal surface, resulting in the deepening of potential min., and in its competition with the sensitivity centers for photoelectrons.

J. W. Longchere, Jr.

1/1

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AUTHORS: Solov'yëv, S.M., Parfenova, N.M. SOV 77-3-4-12/23

TITLE: A Means of Increasing the Stability of Hypersensitized Infrachromatic Films (Sposob povysheniya stabil'nosti gipersensibilizirovannykh infrakhromaticheskikh plenok)

PERIODICAL: Zhurnal nauchnoy i prikladnoy fotografii i kinematografii, 1958, Vol 3, Nr 4, pp 285 (USSR)

ABSTRACT: In experiments to discover a means of stabilizing hypersensitized infrachromatic film, films which were sensitized to the various bands of the infrachromatic spectrum, were dipped in an intermediate bath of 5-methyl-7-oxy-2,3,4-triasaindolysine. It was found that these films preserved their heightened sensitivity unchanged for 20 days followed by a gradual falling off as the fog began to appear and an increase in density. In untreated hypersensitized films, fog increases rapidly and the film is unfit for use within 1-2 days after hypersensitization. The stabilizing technique is described step by step. There is 1 non-Soviet reference.

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SOV 77-3-4-12/23

A Means of Increasing the Stability of Hypersensitized Infrachromatic Films

ASSOCIATION: Vsesoyuznyy nauchno-issledovatel'skiy kinofotoinstitut (The All-Union Research Institute for Photography and Cinematography)

SUBMITTED: April 8, 1958

1. Infrared films--Stability 2. Infrared films--Sensitivity
3. Infrared films--Test results

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23(5) SOV/77-4-2-5/18

AUTHOR: Solov'yev, S.M.

TITLE: The Desensitizing Properties of Sensitizers (Desensibiliziruyushchiye svoystva sensibilizatorov)

PERIODICAL: Zhurnal nauchnoy i prikladnoy fotografii i kinematografii, 1959, Vol 4, Nr. 2, pp 106-115, (USSR)

ABSTRACT: The author refers to two methods of changing a sensitizer into a desensitizer: 1) introducing nitro groups into a molecule of the sensitizer, or nitrogen atoms into the polymethylene chain [Ref.1]; 2) using the sensitizers when introducing them into a photographic emulsion with a surplus of bromide water. Luppo-Cramer [Ref. 2] showed that in this case, sensitizing dyes acquire desensitizing properties; the light sensitivity of sensitized plates containing bromide is lower than that of plates containing bromide but no dye [Ref. 3]. In this article the author discusses a third method, consisting of pro-

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SOV/77-4-2-5/18

The Desensitizing Properties of Sensitizers

cessing the photographic layers with a dye previously oxidized in a bromine water solution. The experiments were carried out as follows; a spirit solution of the dye-sensitizer 3,3' -dimethyl- 4,5,4',5' - dibenzo-9-ethyl-thiacarbocyaninechloride (hereinafter called dye 1) with a concentration $C=1.10^{-4}$ M/liter was prepared. Increasing quantities of bromine water were added to the dye solution, which was crimson-violet before oxidation, so that dark-violet, dark-blue, dark-green and finally yellow-brown colors were obtained. The bromine content in the bromine water was determined analytically and then the number of bromine atoms which had combined with one molecule of the dye was calculated for all the color changes. Thus it was found that the original crimson color changed to dark crimson when 1-2 bromine atoms had combined, into dark blue at 5 about 3, into green at 4-5 and into yellow-brown at 6-7. Evaluation

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SOV/77-4-2-5/18

The Desensitizing Properties of Sensitizers

of the desensitizing properties of oxidized dyes in their action on sensitized photographic layers was achieved by the normal method, determining their effect on the light sensitivity and the latent image. Tests were carried out on other cyanine dyes which were found to be active acceptors of bromine; the oxidized dyes had scarcely any effect on the latent image but strongly suppressed the light sensitivity. The conclusions of the author are: 1) when sensitized dyes are oxidized in a solution of bromine water and washed in a bath with an oxidized dye of sensitized photographic materials, the dyes act as typical desensitizers which have practically no effect on the latent image and lower the total and additional light sensitivity to the same or an even greater degree than the wellknown desensitizers phenosafranine and green pinacryptol, 2) when a series of sensitized dyes are oxi-

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The Desensitizing Properties of Sensitizers

dized in a solution of bromine water and then introduced into a non-sensitized emulsion, the dyes lose their sensitizing properties in direct proportion to the degree of oxidation; 3) different sensitizing dyes when oxidized by bromine water show different desensitizing properties; out of the thiacarbocyanine derivatives tested, dye 1 had the greatest desensitizing action. Finally the author conveys his gratitude to V.A. Dmitriyeva and V.A. Smirnova, who carried out the experimental part of the research. There are 8 graphs, 6 tables and 5 references, 1 of which is Soviet, 2 German, 1 English and 1 French.

ASSOCIATION: Vsesoyuznyy nauchno-issledovatel'skiy kinofotoinstitut (NIKFI) (All-Union Scientific Research Institute for Cinephotography) (NIKFI)

SUBMITTED: October 16, 1956

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PHASE I BOOK EXPLOITATION SOV/4696

Solov'yev, Sergey Mikhaylovich

Infrakrasnaya fotografiya (Infrared Photography) Moscow, Gos. izd-vo "Iskusstvo," 1960. 215 p. 8,700 copies printed.

Special Ed.: G. S. Baranov; Ed.: A. N. Teleshev; Tech. Ed.: V. A. Gorina.

PURPOSE: This book is intended for persons engaged in the study and uses of infrared photography.

COVERAGE: This book presents the general principles and concepts of infrared photography, as well as data on sources of infrared radiation, light filters, and special photomaterials and their processing. It also presents data on long distance and aerial photography, and on the application of infrared photography in medicine, zoology, botany, and in other fields of science and technology. An appendix contains 23 sample plates. The author thanks L. Ya. Kraush, V. I. Pashkova, and S. A. Drukker. References accompany each chapter.

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PHASE I BOOK EXPLOITATION SOV/4159

Akademiya nauk SSSR. Komissiya po nauchnoy fotografii i kinematografii

Uspekhi nauchnoy fotografii, tom 7: Priroda fotograficheskoy chuvstvitel'nosti. Izgotovleniye galoidoserebryanykh fotograficheskikh sloyev. Opticheskaya sensibilizatsiya i gipersensibilizatsiya. Khimiko-fotograficheskaya obrabotka svetochuvstvitel'nykh sloyev (Nature of Photographic Sensitivity. Preparation of Haloid-Silver Photographic Layers. Optical Sensitizing and Hyper-Sensitizing. Chemical-Photographic Treatment of Photo-Sensitive Layers) Moscow, 1960. 260 p. Errata slip inserted. 1,800 copies printed.

Editorial Board: K.V. Chibisov (Resp. Ed.) Corresponding Member, Academy of Sciences USSR, V.I. Sheberstov (Deputy Resp. Ed.) Candidate of Chemical Sciences, Docent, Yu. N. Gorokhovskiy, Doctor of Chemical Sciences, Professor, G.A. Istomin, Doctor of Technical Sciences, Professor, and I.I. Levkoyev, Candidate of Chemical Sciences; Ed. of Publishing House: K.I. Markhilevich; Tech. Ed.: G.S. Simkina.

PURPOSE: This collection of articles is addressed to those working in theoretical and applied photography and cinematography, and to researchers in the chemistry

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and physics of photographic processes.

COVERAGE: The collection contains articles from the editorial files of the Zhurnal nauchnoy i prikladnoy fotografii i kinematografii discussing problems in the preparation and processing of haloid silver light-sensitive layers, the nature of photographic sensitivity, the preservability of photographic layers, the theory and technology of the preparation of photographic emulsions and optical sensitization, and, finally, the chemical photographic processing of black-and-white and color photographic materials. Many of the articles contain the results of scientific investigations made by the authors. The collection also includes several reviews of current problems in the theory of chemical-photographic processes. A bibliography of Soviet and non-Soviet references accompanies each article.

TABLE OF CONTENTS:

I. NATURE OF PHOTOGRAPHIC SENSITIVENESS. PREPARATION OF HALOID SILVER PHOTOGRAPHIC LAYERS

II. OPTICAL SENSITIZATION AND HYPERSENSITIZATION

Nature of Photographic Sensitivity (Cont.) SOV/4159

AVAILABLE: Library of Congress

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10-24-60

Card 7/7

SOLOV'YEV, S.M.

Simplified testing of photographic materials for stability by means of storage in an oxygen atmosphere. Zhur.nauch.i prikl.fot. i kin. 5 no.6:406-412 N-D '60. (MIRA 14:1)

1. Vsesoyuznyy nauchno-issledovatel'skiy kinofotoinstitut.
(Photography—Films—Testing)

S/081/62/000/005/070/112
B156/B108

AUTHORS: Solov'yev, S. M., Parfenova, N. M.

TITLE: Variation in natural and induced sensitivity to light when photographic film is stored

PERIODICAL: Referativnyy zhurnal. Khimiya, no. 5, 1962, 502, abstract 5L406 (Tr. Vses. n.-i. kinofotoin-ta, no. 35, 1960, 82-87)

TEXT: To find the mechanism whereby photographic film ages, variations in the natural and induced light sensitivities were investigated during the ageing of panchromatic and infrachromatic film; it was established that there is a simultaneous decrease in the natural and induced sensitivities to light. [Abstracter's note: Complete translation.]

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SOLOV'YEV, S.M.; RODIONOVA, N.I.

Investigating dye adsorption on silver halides in the low saturation area of the surface. Zhur.nauch.i prikl.fot. i kin. 6 no.5:323-333 S-O '61. (MIRA 14:9)

1. Vsesoyuznyy nauchno-issledovatel'skiy kinofotoinstitut (NIKFI).

(Photographic emulsions)

SOLOV'YEV, S.M.; STAROSEL'SKIY, A.L.

Analyzing the spectral reflecting characteristics of natural formations in order to select the optimum zones of sensitization of the sensitive layers. Trudy NIKFI no.51:104-119 '62. (MIRA 16:12)

SOLOV'YEV, S.M.; RODINOVA, N.I.

New method for stabilizing hypersensitized layers. Zhur.nauch. i prikl. fot. i kin. 8 no.2:146-147 Mr-Ap '63. (MIRA 16:3)

1. Vsesoyuznyy nauchno-issledovatel'skiy kinofotoinstitut (NIKFI).
(Photographic emulsions) (Photographic sensitometry)

SOLOV'YEV, S.M.

Diorama for testing motion-picture films. Zhur. nauch. i prikl. fot. i kin. 8 no.6:460-461 N-D '63. (MIRA 17:1)

1. Vsesoyuznyy nauchno-issledovatel'skiy kinofotoinstitut (NIKFI).

ACCESSION NR: AR4015699 S/0081/63/000/023/0456/0456

SOURCE: RZh. Khimiya, Abs. 23N357

AUTHOR: Solov'yev, S. M.; Starosel'skiy, A. L.

TITLE: Analysis of the spectral reflecting properties of natural formations with the aim of selecting the optimal zones of sensitization on light-sensitive films

CITED SOURCE: Tr. Vses. n.-i. kinofotoin-ta, vy*p. 51, 1962, 104-119

TOPIC TAGS: photography, film, light sensitivity, reflection, spectral reflecting property, film sensitization

ABSTRACT: It was shown that the best decoding properties on aerial photographs can only be achieved by a complete correspondence between the spectral distribution of the zones of sensitivity of the photographic materials and the relative intensity of the objects in the picture. Recommendations are given as to the choice of spectral zones of sensitivity for aerial photographs. V. Ch.

DATE ACQ: 09Jan64 SUB CODE: ES ENCL: 00

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L 14000-65 EWT(m)/T/EWA(m)-2 AFWL/BSD/ASD(p)-3/AEDC(a)/ASD(a)-5/AFMDC/SSD/ESD(t)
ACCESSION NR: AP4048647 S/0048/64/028/010/1724/1724

AUTHOR: Selitskiy, Yu. A.; Solov'yev, S. M. B

TITLE: Preparation of thin targets for charged-particle work 19

SOURCE: AN SSSR. Izv. Seriya fizicheskaya, v. 28, no. 10, 1964, 1724

TOPIC TAGS: charged particle, thin target, reactor physics, nuclear spectroscopy, deuteron

ABSTRACT: A simplified method of preparing thin 2 x 2 cm targets with a substrate thickness varying from $4 \cdot 10^{-5}$ to 10^{-3} gr/cm^2 and an active-area thickness of up to $3 \cdot 10^{-4}$ gr/cm^2 for experimental research on charged particles is described. Targets were prepared by evaporating aluminum or silver and either uranium or thorium tetrafluoride on a glass plate covered with a thin layer of liquid soap. To separate the target, the glass plate was emersed in water at an angle. A frame with a round opening was then brought into contact with the target which, when positioned to cover the hole, clung to the frame without the use of an adhesive. It was found that targets

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ACCESSION NR: AP4048647

prepared in this manner can withstand a deuteron flow of 0.5 μamp for several hours.

ASSOCIATION: none

SUBMITTED: 00 ENCL: 00 SUB CODE: NP

NO REF SOV: 000 OTHER: 000 ATD PRESS: 3133

Card 2/2

NEMILOV, Yu.A.; PAVLOV, V.V.; SELITSKIY, Yu.A.; SOLOV'YEV, S.M.; EYSMONT, V.P.

Distribution of the masses and kinetic energies of fragments in the fission of Th^{232} by 12 Mev. deuterons. IAd. fiz. 1 no.4:633-638 Ap '65. (MIRA 18:5)

L 64368-65 EWT(m)/EPF(n)-2/EWP(t)/EWP(b)/EWA(h) IJP(c) JD/WW/JG/DM

ACCESSION NR: AP5014534 UR/0089/65/018/005/0456/0459 38 B

539.172.13 + 539.17.015

AUTHOR: Nemilov, Yu. A.; Pavlov, V. V.; Selitskiy, Yu. A.; Solov'yev, S. M.; Eysmont, V. P.

TITLE: Total and differential cross sections for the fission of uranium and thorium by low-energy deuterons

SOURCE: Atomnaya energiya, v. 18, no. 5, 1965, 456-459

TOPIC TAGS: uranium, thorium, fission cross section, subbarrier deuteron, total cross section, differential cross section, fission fragment detection

ABSTRACT: By registering the fission fragments with glass plates, the authors were able to determine the total and differential cross sections for the fission of Th^{232}, U^{233}, U^{235}, and U^{238} by deuterons of energy much lower than the Coulomb barrier (6.6 MeV and below). Ordinary photographic plates were used, the emulsion serving as a protection for the surface. The targets were made by evaporating fluorides of uranium and thorium on thin silver substrates. The deuterons were accelerated in a cyclotron and their energy was determined accurate to 0.1 MeV. The experimental set-up is illustrated in Fig. 1 of the Enclosure. The results are compared with published data in which the cross sections have been obtained with

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L 64368-65
ACCESSION NR: AP5014534

semiconductor detectors at larger deuteron energies. The differential cross sections of all nuclei varied smoothly within a narrow range at the investigated deuteron energies. The anisotropy of the angular distribution was quite smooth in all cases, except that for U^{235} the angle distribution of the fragments had a maximum not at 0° but at 90° to the beam. Although the results did not differ greatly from those obtained by others, it is indicated that the reactions preceding fission of nuclei having different neutron fission thresholds and bombarded by subbarrier deuterons may differ noticeably from those at higher energies. Orig. art. has: 4 figures and 1 table.

ASSOCIATION: none

SUBMITTED: 23Jun64 ENCL: 01 SUB CODE: NP

NR REF SOV: 005 OTHER: 006

Card 2/3

L 64368-65
ACCESSION NR: AP5014534

ENCLOSURE: 01

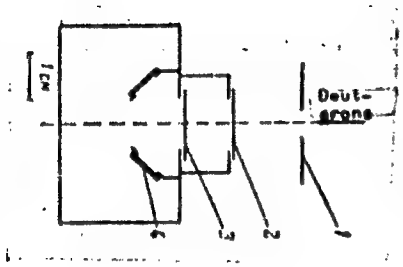

Fig. 1. Setup for the measurement of fission cross sections:

1 - Diaphragm, 2 - foils for the measurement of deuteron energy, 3 - target, 4 - glass plate to register the fission fragments.

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Lathes

Revolving tailstock center., Stan. i instr., 23, no. 1, 1952.

Monthly List of Russian Accessions, Library of Congress, April 1952. Unclassified.

SOLOV'YEV, S.N., kandidat tekhnicheskikh nauk.

High-speed surface milling. Trudy VIGM no.17:119-137 '54.
(MLRA 9:3)
(Hydraulic machinery) (Machine-shop practice) (Surfaces (Technology))

SOLOV'YEV, S.N.

Balance in the precision of diametral dimensions of fine-finished parts. Stan. i instr. 26 no.3:20-22 Mr '55. (MLRA 8:6)
(Machine-shop practice)

SOLOV'YEV, S.N., inzh.

Errors in the shape of cylindrical surfaces of workpieces in cross sections perpendicular to the axis. Vest. mash. 37 no.8:57-61 Ag '57. (Surfaces (Technology)) (MLRA 10:9)

25(1) PHASE I BOOK EXPLOITATION SOV/2245

Moscow. Stankoinstrumental'nyy institut

Voprosy tochnosti v tekhnologii mashinostroyeniya (Problems of Accuracy in Machine-Building Technology) Moscow, Mashgiz, 1959. 90 p. Errata slip inserted. 3,500 copies printed.

Ed.: B.S. Balaskshin, Doctor of Technical Sciences, Professor; Ed. of Publishing House: M.N. Morozova; Tech. Ed.: L.P. Gordeyeva; Managing Ed. for Literature on Metal Working and Instrument Making (Mashgiz): R.D. Beyzel'man, Engineer.

PURPOSE: This collection of articles is intended for engineering and technical personnel of plants and laboratories and also for personnel of higher educational institutions and scientific institutes.

COVERAGE: The collection includes articles by members of the department of Machine-building Technology of the Stankoinstrumental'nyy institut imeni I.V. Stalin (Machine Tool and Small Tool Institute imeni I.V. Stalin) dealing with accuracy in the manufacture of

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machines. Various problems concerning accuracy in cylindrical grinding and machining of rigid steel parts by the method of fine turning on an ordinary lathe, the effect of machine tool rigidity on accuracy of machining, accuracy in high-speed reaming of deep holes, and problems concerning automatic assembly are discussed.

TABLE OF CONTENTS:

Problems of Accuracy in Machine-Building (Cont.) SOV/2245

A model of an automatic assembly unit designed and built at the ZIL (Plant imeni Likhachev) is described. The unit performs several automatic operations such as bending wire and assembling the washer-rivet joint. The machine is to be used at agricultural machinery plants.

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Card 4/4

SOLOV'YEV, S.N.

Device for precise adjustment of the cutting tool on lathes. Mashinostroitel' no.5:23-24 My '60. (MIRA 14:5)
(Lathes—Attachments)

SOLOV'YEV, S.N., kand.tekhn.nauk; POMERANTSEV, L.M., kand.tekhn.nauk

Experimental investigation of a hydraulic copying rest.
Vest.mash. 40 no.9:65-67 S '60. (MIRA 13:9)
(Lathes)

TSYGANOV, V.A.; GOLYAKOV, P.N.; BEZBORODOV, A.M.; NAMESTNIKOVA, V.P.; KHOPKO, G.V.; SOLOV'YEV, S.N.; MALYSHKINA, M.A.; BOL'SHAKOVA, L.O.

Biology and isolation of the antifungal antibiotic 26/1. Antibiotiki 4 no.1:21-26 Ja-F '59. (MIRA 12:5)

1. Leningradskiy nauchno-issledovatel'skiy institut antibiotikov.

(ANTIBIOTICS,
antibiotic 26/1, fungicidal properties & biol. (Rus))
(FUNGICIDES,
antibiotic 26/1 (Rus))

TSYGANOV, V.A.; GOLYAKOV, P.N.; SOLOV'YEV, S.N.; BELEN'KIY, B.G.; FILIPPOVA, A.I.

Antibiotic substances of the polyene series. Report No.1: Study of the biological properties of actinomyces which produce polyene antibiotics. Eksp. i klin. issl. po antibiot. 2:6-12 '60. (MIRA 15:5)

(ANTIBIOTICS) (ACTINOMYCES)

TSYGANOV, V.A.; GOLYAKOV, P.N.; SOLOV'YEV, S.N.; BELEN'KIY, B.G.; FILIPPOVA, A.I.

Antibiotic substances of the polyene series. Report No.2: Study of the physicochemical properties of polyene antibiotics. Eksp. i klin. issl. po antibiot. 2:13-20 '60. (MIRA 15:5)
(ANTIBIOTICS)

SOLOV'YEV, S.N.; MALYSHKINA, M.A.; BOL'SHAKOVA, L.O.

Chemistry of the polyene antibiotics. Report No.1:Isolation of the antibiotic 26/1 from the mycelium. Eksp. i klin. issl. po antibiot. 2:254-257 '60. (MIRA 15:5)
(ANTIBIOTICS)

SOLOV'YEV, S.N.; BELEN'KIY, B.G.; PETROVA, L.Ya.; MALYSHKINA, M.A.; BOL'SHAKOVA, L.O.; OVCHAROV, V.G.

Chemistry of the polyene antibiotics. Report No.2: Sorption properties of antibiotic 26/1 on anionites. Eksp. i klin. issl. po antibiot. 2: 258-262 '60. (MIRA 15:5)

(ANTIBIOTICS) (ANIONS) (SORPTION)

SOLOV'YEV, S.N.; BELEN'KIY, B.G.; PETROVA, L.Ya.; MALYSHKINA, M.A.; OVCHAROV, V.G.

Chemistry of the polyene antibiotics. Report No.3: Purifying antibiotic 26/1 of amine admixtures. Eksp. i klin. issl. po antibiot. 2:263-267 '60. (MIRA 15:5)
(ANTIBIOTICS) (AMINES)

TSYGANOV, V.A.; GOLYAKOV, P.N.; SOLOV'YEV, S.N.; BELEN'KIY, B.G.; FILIPPOVA, A.I.

Antibiotic properties and systematic position of some actinomycetes from the globisporus group. Report No. 2. Trudy Inst. microbiol. no.8:182-187 '60. (MIRA 14:1)

1. Leningradskiy nauchno-issledovatel'skiy institut antibiotikov.
(ACTINOMYCETALES)

MALYSHKINA, M.A.; BELEN'KIY, B.G.; SOLOV'YEV, S.N.

Chemical purification of antibiotic 26/1 (levorin). Antibiotiki 8 no.7:584-588 Jl'63 (MIRA 17:3)

1. Leningradskiy nauchno-issledovatel'skiy institut antibiotikov.

MALYSHKINA, M.A.; BELEN'KIY, B.G.; SOLOV'YEV, S.N.

Study of the physicochemical properties of antibiotic 26/1 (levorin). Antibiotki 8 no. 11:999-1002 N '63. (MIRA 17:9)

1. Leningradskiy nauchno-issledovatel'skiy institut antibiotikov.

L 41333-65 EWT(1)/EWA(j)/EWA(b)-2 RO
ACCESSION NR: AR4039967 S/0299/64/000/009/B025/B025 10 B

SOURCE: Ref. zh. Biol. Sv. t., Abs. 9B190

AUTHOR: Severinets, L. Ya.; Solov'yev, S. N.

TITLE: Xanthalycins A and B - new antibiotics 6

CITED SOURCE: Sb. Materialy* 3-y Nauchn. sessii Leningr. in-ta antibiotikov, 1963. L., 1963, 82

TOPIC TAGS: xanthalycin, antibiotic, polyene, pentane

TRANSLATION: Strain 1130/12 forms 2 antibiotics (named xanthalycin A and B) with antifungal activity. The new antibiotics belong to the pentane group of the polyene series which does not contain nitrogen in the molecule, but in physicochemical properties they differ from other pentanes (filipin, lagozin, pentamycin, and fungichromycin). Antibiotics A and B are similar to one another, but have a different coloring and the white one changes irreversibly into yellow under the effect of light. From a resume.

SUB CODE: LS ENCL: 00

Card 1/1

BELEN'KIY, B.G.; BOL'SHAKOVA, L.I.; KAMYSHKO, O.F.; [illegible], Yu.V.; [illegible], I.G.; SOLOV'YEV, S.N.; TSYGANOV, V.A.

Antibiotic from a new type of Penicillium with glucose dehydrogenase activity. Antibiotiki 9 no.7:602-603 Jl '64. (MIRA 18:3)

1. Leningradskiy nauchno-issledovatel'skiy institut antibiotikov.

SOLOV'YEV, S.N.; SEVERINETS, L.Ya.

Isolation, properties and separation of individual components of the antibiotic 1130/12. Antibiotiki 10 no.1:9-13 Ja '65. (MIRA 18:4)

1. Leningradskiy nauchno-issledovatel'skiy institut antibiotikov.

BOGDANOVA, N.P.; KONEV, Yu.Ye.; SAMNIKOV, V.A.; SOLOV'YEV, S.N.; TYUGIN, B.V.; TSYGANOV, V.A.

Identification of the antibiotic 1160 produced by actinomycetes from the Actinomyces griseus group. Antibiotiki 10 no.3:195-201 Mr '65. (MIRA 18:10)

1. Leningradskiy nauchno-issledovatel'skiy institut antibiotikov.

BORI[illegible], M.A.; KOTENKO, T.V.; SOLOV'YEV, S.N.

New antifungal antibiotic mycoheptin from the group of non-aromatic heptaenes. Antibiotiki 10 no.9:776-780 S '65. (MIRA 18:9)

1. Leningradskiy nauchno-issledovatel'skiy institut antibiotikov, Gdan'skiy politekhnicheskiy institut, Pol'skaya Narodnaya Respublika.

BOGDANOVA, N.P.; KOVALEVA, L.A.; SHENIN, Yu.D.; SOLOV'YEV, S.N.; TSYGANOV, V.A.; ZHUKOVA, R.A.; NAMESTNIKOVA, V.P.

Violacein, a new antibiotic. Mikrobiologiia 34 no.4:623-626 Jl-Ag '65. (MIRA 18:10)

1. Leningradskiy nauchno-issledovatel'skiy institut antibiotikov.

TSYGANOV, V.A.; KONEV, Yu.Ye.; FURSENKO, M.V.; IOFINA, E.I.; AL'BERT, M.M.; MUSTAFOVA, N.N.; VENKOVA, I.B.; SOLOV'YEV, S.N.; MALYSHKINA, M.A.; BOGDANOVA, N.P.; KOTENKO, T.V.; FILIPPOVA, A.I.

Isolation and characteristics of actinomycetes producing the antibiotic trichomycin. Antibiotiki 9 no.4:291-296 Ap '64. (MIRA 19:1)

1. Leningradskiy nauchno-issledovatel'skiy institut antibiotikov.

L 22946-66 EWT(1)/T JK

ACC NR: AP6014828 SOURCE CODE: UR/0297/65/010/001/0009/0013

33
26
B

AUTHOR: Solov'yev, S. N.; Severinets, L. Ya.

ORG: Leningrad Scientific Research Institute of Antibiotics (Leningradskiy nauchno-issledovatel'skiy institut antibiotikov)

TITLE: Isolation, properties, and separation into components of antibiotic 1130/12

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SOURCE: Antibiotiki, v. 10, no. 1, 1965, 9-13

TOPIC TAGS: antibiotic, bacteria, solvent extraction, mouse/1130-12 antibiotic

ABSTRACT: The antibiotic 1130/12 was isolated from the mycelium of a strain of Actinomyces xantholicus, by extraction with ethanol. It is in the form of light-yellow amorphous powder, soluble in dimethylformamide, low alcohols, acetone, glacial acetic acid, glycol, and pyridine; it is insoluble in chloroform, ether, water, and petroleum ether. A qualitative analysis indicates the presence of a polyene grouping, and the absence of sugars, glucosamines, sulfur, and haloids. The steps required for the isolation of the antibiotic are as follows: a) oxidation of the cultural liquid diluted with HCl to a pH of 3.5-4.0; b) isolation of the mycelium; c) triple treatment of the mycelium with ethanol, 1:2 (weight/volume); d) neutralization of the extracts to a pH of 7.(e) concentration under a vacuum; f) precipitation by water; g) separation and washing of the precipitate with water;

Card 1/2 UDC: 615.779.931-011/014

ACC NR: AP6014828

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h) lyophylization. The substance obtained has been found to be a highly complex antibiotic, with antibacterial and antifungus properties. Two preparations have been obtained from the substance: 1) a preparation isolated from the mycelium which could not be separated into components; 2) a preparation obtained from the mycelium consisting of inactive admixtures and an amorphous antibacterial component. The antibiotic has been found to be active against Staphylococcus aureus 209, other Staphylococci resistant to other antibiotics, and against Streptococci. It is thermostable, retaining its activity when heated to temperatures of up to 90 degrees to pH of 4.0-6.0. Its LD_{50} when intraperitoneally administered to white mice in acute experiments is 250 milligrams per kilogram body weight. The authors thank A. N. Yegorenkovaya and V. N. Shatik for biological control; A. A. Medvedkovaya and B. V. Sokolov for determining the wide antibiotic spectrum of active antibiotics; V. G. Ovcharov for determining the toxicity; and V. S. Nynyu and L. B. Sokolov for carrying-out the fermentation and isolation preparations. Orig. art. has: 3 figures and 1 table. [JPRS]

SUB CODE: 06 / SUBM DATE: 31Jul63 / ORIG REF: 002

Card 2/2

ACC NR: AP6034131 SOURCE CODE: UR/0297/66/011/010/0892/0898

AUTHOR: Bol'shakova, L. O.; Belen'kiy, B. G.; Solov'yev, S. N.

ORG: Leningrad Scientific Research Institute of Antibiotics (Leningradskiy nauchno-issledovatel'skiy institut antibiotikov)

TITLE: Partial hydrogenation of tetraene antibiotics over palladium catalysts

SOURCE: Antibiotiki, v. 11, no. 10, 1966, 892-898

TOPIC TAGS: antibiotic, tetraene antibiotic, ~~[illegible]~~, ~~[illegible]~~ hydrogenation, palladium

ABSTRACT: Partial hydrogenation of nystatin and pimaricin over a palladium catalyst according to the system in acid, neutral, and alka-

A) $\overline{R\text{-}(CH{=}CH)_n\text{-}R'} \xrightarrow{nH_2} \overline{R\text{-}(CH_2\text{-}CH_2)_n R'}$

B) 1. $\overline{R\text{-}(CH{=}CH)_n R'} \xrightarrow{H_2} \overline{R\text{-}CH_2\text{-}CH_2\text{-}(CH{=}CH)_{n-1} R'}$

2. $\overline{R\text{-}CH_2\text{-}CH_2\text{-}(CH{=}CH)_{n-1} R'} \xrightarrow{H_2} \overline{R\text{-}(CH_2\text{-}CH_2)_2\text{-}(CH{=}CH)_{n-2} R'}$

. . . . . .

$n-1$ $\overline{R\text{-}(CH_2\text{-}CH_2)_{n-2}(CH{=}CH)_2 R'} \xrightarrow{H_2} \overline{R\text{-}(CH_2\text{-}CH_2)_{n-1}\text{-}CH{=}CH\text{-}R'}$

n $\overline{R\text{-}(CH_2\text{-}CH_2)_{n-1}\text{-}CH{=}CH\text{-}R'} \xrightarrow{H_2} \overline{R\text{-}(CH_2\text{-}CH_2)_n R'}$

Card 1/2 UDC: 615.779.9-012

ACC NR: AP6034131

line media was studied using ultraviolet and infrared adsorption spectrophotometric methods. Changes in biological activity correlated with decreased adsorption maximum of nystatin. The reaction was single stage in about 60% of the cases. Orig. art. has: 6 figures.

[W.A. 50]

SUB CODE: 06/ SUBM DATE: 08Dec65/ ORIG REF: 003/ OTH REF: 005

Card 2/2

ACC NR: AP6034131 SOURCE CODE: UR/0297/66/011/010/0892/0898

AUTHOR: Bol'shakova, L. O.; Belen'kiy, B. G.; Solov'yev, S. N.

ORG: Leningrad Scientific Research Institute of Antibiotics (Leningradskiy nauchno-issledovatel'skiy institut antibiotikov)

TITLE: Partial hydrogenation of tetraene antibiotics over palladium catalysts

SOURCE: Antibiotiki, v. 11, no. 10, 1966, 892-898

TOPIC TAGS: antibiotic, tetraene antibiotic, ~~[illegible]~~, ~~[illegible]~~ hydrogenation, palladium

ABSTRACT: Partial hydrogenation of nystatin and pimaricin over a palladium catalyst according to the system in acid, neutral, and alka-

A) $\overline{R\text{-}(CH{=}CH)_n\text{-}R'} \xrightarrow{n\,H_2} \overline{R\text{-}(CH_2\text{-}CH_2)_n\,R'}$

B) 1. $\overline{R\text{-}(CH{=}CH)_n\,R'} \xrightarrow{H_2} \overline{R\text{-}CH_2\text{-}CH_2\text{-}(CH{=}CH)_{n-1}\,R'}$

2. $\overline{R\text{-}CH_2\text{-}CH_2\text{-}(CH{=}CH)_{n-1}\,R'} \xrightarrow{H_2} \overline{R\text{-}(CH_2\text{-}CH_2)_2\text{-}(CH{=}CH)_{n-2}\,R'}$

. . . . . .

$n-1$ $\overline{R\text{-}(CH_2\text{-}CH_2)_{n-2}(CH{=}CH)_2\,R'} \xrightarrow{H_2} \overline{R\text{-}(CH_2\text{-}CH_2)_{n-1}\text{-}CH{=}CH\text{-}R'}$

n $\overline{R\text{-}(CH_2\text{-}CH_2)_{n-1}\text{-}CH{=}CH\text{-}R'} \xrightarrow{H_2} \overline{R\text{-}(CH_2\text{-}CH_2)_n\,R'}$

Card 1/2 UDC: 615.779.9-012

ACC NR: AP6034131

line media was studied using ultraviolet and infrared adsorption spectrophotometric methods. Changes in biological activity correlated with decreased adsorption maximum of nystatin. The reaction was single stage in about 60% of the cases. Orig. art. has: 6 figures.

[W:A: 50]

SUB CODE: 06/ SUBM DATE: 08Dec65/ ORIG REF: 005/ OTH REF: 005

Card 2/2